

3 Overview of BWM Watershed Protection Goals and Programs

This section describes the mandate and the goals of the Bureau of Watershed Management, the agency responsible for protecting the Wachusett Reservoir watershed. The assessment and ranking of potential contamination sources, originally developed in the 1991 Plan, was updated in 1998 and are revised for this 2003 Plan. The revised ranking reflects the water quality goals and emphasizes control of pathogens. In addition, this section presents an overview of the BWM's watershed protection and management programs, which follow from the goals and priorities. Lastly, this section presents the conceptual framework of preservation of forested land and open space, technical assistance to watershed communities to ensure regulations are protecting water resources, and direct action to correct the few existing impacts.

3.1 *Mission*

The Bureau of Watershed Management within the Division of Water Supply Protection of the Department of Conservation and Recreation, a state agency within the Executive Office of Environmental Affairs, has been charged by Chapter 26 of the Acts of 2003, §290 with protection of the Wachusett Reservoir watershed. The Bureau continues a century of MDC management. The MDC Division of Watershed Management was established when Chapter 372 of the Acts of 1984 divided the former MDC Water Division into the DWM, responsible for watershed operation and management, and the new Waterworks Division of the MWRA, responsible for transmission and treatment. BWM is a single-purpose, watershed-focused unit of DCR.

The BWM inherits the mission derived from the MDC Division of Watershed Management's enabling legislation and subsequent amendments, found at MGL c. 92, §§ 104 – 120. The statute directs the BWM to:

...construct, maintain and operate a system of watersheds, reservoirs, water rights and rights in sources of water supply [to] supply thereby a sufficient supply of pure water to the Massachusetts Water Resources Authority, and [to] utilize and conserve said water and other natural resources to protect, preserve and enhance the environment of the Commonwealth and to assure the availability of pure water for future generations.

The body of legislation makes directives on specific management aspects of the watersheds, authorizing BWM to:

- Have the exclusive right and control over all ponds, reservoirs, and other property within the watershed system, and [may] order all persons to keep from entering in, upon or over the waters thereof and the lands of the commonwealth or towns surrounding same.
- Make rules and regulations for the protection of the watersheds.

- Establish the Quabbin Watershed Advisory Committee, the Watershed System Advisory Committee (covering Wachusett and Sudbury watersheds), and the Ware River Watershed Advisory Committee.
- Adopt periodic watershed management plans to provide for forestry, water yield, and public access among other purposes.

Beyond its broad mandate, BWM has additional, specific responsibilities as provided in various legislative acts. Some of the acts most currently relevant to BWM are listed in Table 3-1.

Building on the legislative-defined mission, BWM's charge today has evolved:

- To maintain and operate the source facilities (including dams) safely and efficiently.
- To preserve and improve water quality of the supply sources, through regulation, direct action, and cooperation, as needed to protect public health and to meet state and federal water quality standards.
- To fulfill the watershed protection and management requirements associated with drinking water regulations.
- To implement the specific directives of the legislature, such as providing recreation opportunities balanced with the protection of the water supply sources and promulgating and enforcing rules and regulations for BWM lands and for protected zones.
- To involve watershed towns, residents, and the public in appropriate ways in the conduct of the BWM's watershed management functions.

In addition, BWM has defined water quality goals for the system:

- Primary Goals
 - To prevent waterborne disease.
 - To maintain a high quality source water.
 - To meet the source water coliform criterion.
- Secondary Goals
 - To reduce/control nutrient inputs to the reservoir.
 - To reduce risk of a chemical or hazardous material spill.
 - To control general pollutant transport into the reservoir.

Together, the mission and water quality goals provide the basis for all of BWM's activities.

3.2 Historical Activities

Since the development of the Wachusett Reservoir in 1908, BWM (and its predecessors, MDC Division of Watershed Management and MDC Water Division) has played a major role in watershed protection and management. Traditionally, the agency's watershed activities have concentrated on managing, operating, and maintaining the water supply system.

Watershed Management. Watershed management activities have included routine water quality monitoring of reservoirs, tributaries, and rivers; environmental quality assessments of subwatersheds; management of the boat fishing areas at Quabbin Reservoir; and oversight of BWM rules for the protection of the water supply (originally enforced by the Metropolitan Police, now by the State Police, Environmental Police, and the Watershed Rangers). BWM has also historically managed its forested lands through such activities as silvicultural operations, planting desired species, and maintaining fire roads. BWM also conducts wildlife management within its water supply lands and waters (e.g., gull control program).

Operations. Operations activities included operating the dams and transfer mechanisms to attain desired reservoir water levels established with consideration to demand, required downstream flow releases, seasonal flooding prevention, and dam safety. MDC also was responsible for operation and maintenance of the Rutland-Holden Trunk Sewer and Relief Trunk Sewer System and coordination among the towns of Rutland, Holden and Worcester; this function is currently performed by MWRA Sewerage Division. BWM is responsible for the construction of the Holden/West Boylston Sewer Extension.

Maintenance. BWM has historically maintained a variety of facilities under its care, such as BWM-owned dams, bridges and buildings, certain Nashua River bridges, the Quabbin Park Cemetery, and BWM-owned land within the watersheds.

BWM and its predecessor agencies have always maintained an active water quality monitoring program for the tributaries and the reservoirs. BWM has historically conducted sanitary surveys and active field inspections to look for pollution sources in the watershed. These surveys are now coordinated through the Environmental Quality Section under a broad structure of Environmental Quality Assessments (EQAs; **see Section 5.3**), which form the foundation for many of BWM's planning and remediation efforts.

MDC and MWRA prepared Watershed Protection Plans (WPPs or Plans) for the Wachusett Reservoir and Quabbin Reservoir/Ware River watersheds. The Plans were completed in 1991 and represented the first comprehensive watershed studies for water supply protection purposes. These Plans were updated in 1998 for Wachusett Reservoir and 2000 for Quabbin Reservoir/Ware River. The Plans follow Department of Environmental Protection (DEP) guidance, and outline a multi-year program of control measures to prevent water quality impacts from activities on and off Commonwealth-owned lands.

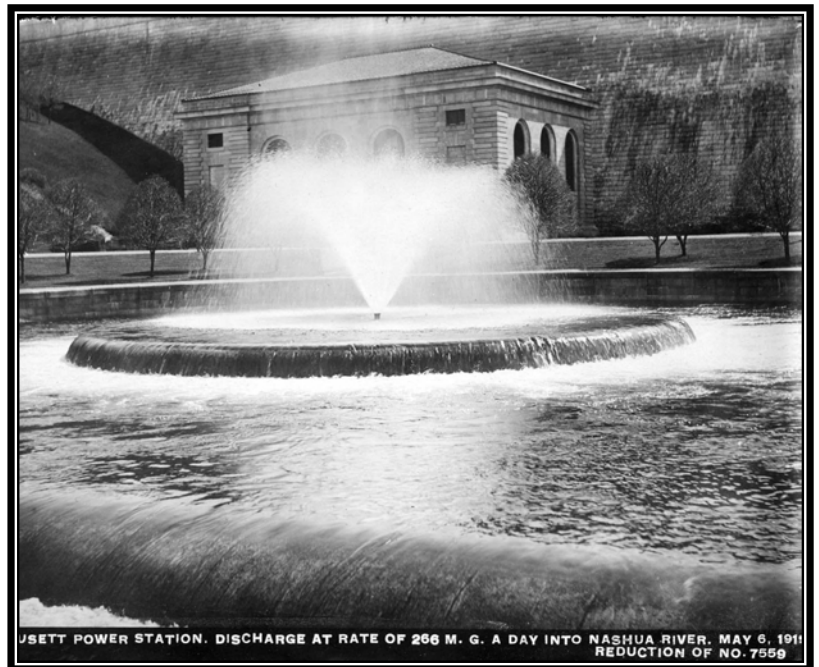


Table 3-1
Legislative Acts Relevant to BWM

Source	Summary
Chapter 488 of the Acts of 1895	Creates Metropolitan Water Board, with diverse duties and authorities, including construction of Wachusett Reservoir by taking waters of the Nashua River.
Chapter 168 of the Acts of 1901, § 1,5	Creates Metropolitan Water and Sewage Board.
Chapter 350 of the Acts of 1919, §123	Creates MDC.
Chapter 21 of the Acts of 1931, §1	Grants bird management authority.
Chapter 321 of the Acts of 1927	Authorizes creation of Quabbin Reservoir by taking waters of the Swift River; and diverse related activities.
Chapter 77 of the Acts of 1932	Authorizes removal of game fish from Wachusett for stocking purposes.
Chapter 262 of the Acts of 1932	Authorizes sewer construction.
Chapter 421 of the Acts of 1946	Permits fishing in certain parts of the Quabbin Reservoir (from the shore).
Chapter 300 of the Acts of 1947	Amends c. 421 of the Acts of 1946 to allow adoption of regulations governing fishing and water supply protection.
Chapter 737 of the Acts of 1972 (Kelly-Wetmore)	Sets forth rules for the management of Quabbin and Ware lands.
Chapter 204 of the Acts of 1975	Allows MDC administrative rights of entry like those of DWPC.
Chapter 797 of the Acts of 1979	Requires Payment in Lieu of Taxes (PILOT Payments) to municipalities.
Chapter 372 of the Acts of 1984	Creates DWM (and MWRA), with diverse duties and authority.
Chapter 734 of the Acts of 1985	Adds to the list of organizations from which QWAC membership may be nominated.
Chapter 436 of the Acts of 1990	Amends c. 737 of the Acts of 1972 to allow hunting in accordance with a deer management program.
Chapter 36 of the Acts of 1992 (Watershed Protection Act)	Establishes land use restrictions around water features in Quabbin, Ware and Wachusett; land acquisition authority and related provisions.
Chapter 242 of the Acts of 1995, §§ 2, 3	Creates Ware River Watershed Advisory Committee.
Chapter 26 of the Acts of 2003, §290	Creates Department of Conservation and Recreation, Division of Water Supply Protection.

Source: DCR/DWSP/BWM, 2003.

In the mid-1990s, DWM expanded into a larger role in wastewater management issues in the watershed by working with the towns of Holden and West Boylston to construct sewers, and worked with local Boards of Health to identify major problems and solutions with on-site wastewater disposal systems (**see Section 6**). Implementing the 1998 Plan over the past five years, BWM programs have addressed public access, wildlife, construction, on-site septic systems, agriculture, spills of hazardous materials, and other issues. From a history of forestry and management of its

own land holdings, the BWM has grown into a steward of the watershed as a whole ecosystem, playing a positive role in managing the uses and activities of water quality significance on both public and private lands.

3.3 *Overview of Watershed Protection Programs*

3.2.1 Current Program

BWM has implemented the 1998 WPP for Wachusett Reservoir Watershed. DEP has determined that the plan complies with its Policy 89-09 and related guidance. DEP has conducted annual on-site inspections of Wachusett Reservoir watershed to evaluate the adequacy of BWM's watershed protection program and has approved the Bureau's watershed program at each inspection.

3.2.2 Assessment of Threats

The 1998 Plan included identification of potential sources of contamination, and ranking of these threats as High, Medium, or Low priority. The 1998 threat priorities were based on the best available information at the time, including DWM knowledge of the land use or activity, federal and state environmental permit records, files from local town boards, land use data, and available maps.

In the five years since the Plan's development, many studies were completed, increasing the available body of watershed and reservoir data (**see Section 8.4**). For the Wachusett Reservoir watershed, BWM and MWRA have completed expanded water quality monitoring (including pathogens, studies of other indicator organisms, and biomonitoring), developed reservoir water quality models, stormwater modeling, various pilot projects such as road Best Management Practices (BMPs), geographic information system (GIS) coverage at a parcel level of detail, wildlife surveys, and EQAs. BWM has also refined specific water quality goals since the 1998 Plan, incorporating them into the Bureau's prioritization of activities.

With BWM's greater knowledge of watershed activities, reservoir hydrodynamics, and water quality, and in the context of defined water quality goals, it is appropriate to revisit the activities and rankings identified in the 1991 and 1998 Plans. While BWM and MWRA remain committed to reducing all potential contaminants in the reservoir, drinking water industry research clearly indicates that control of pathogens must be a top concern. Therefore, activities involving potential exposure to human or animal wastes are high priority for control. Conversely, some types of pollution threats (such as underground fuel storage tanks) are highly regulated by DEP and typically pose a low level risk to surface waters, and are a particularly low threat in the Wachusett Reservoir watershed.

Table 3-2 lists the threats, recommended actions from the 1998 Plan, the status of those actions, current threat status, and staff priorities. The "Staff Priority" column highlights the amount of staff time and resources necessary to address each particular pollution threat. The threat assessment and staff priority, however, may not be equal. For example, stormwater is assessed as a "Medium"

threat, yet it has become a “High” staff priority due to the increased focus on the issue from the national “Phase II” regulations as well as the Bureau’s success on other “High” threat items. **Table 3-3** compares the threat priorities between the 1998 and 2003 Plans; it also points to the Sections that discuss each pollution threat. Most assessments have remained the same. The few modifications that have occurred were made after careful consideration of conditions in the Wachusett Reservoir watershed combined with the status of the watershed protection program.

3.2.3 Framework for Programs

BWM and MWRA are committed to a strong watershed protection program for the Quabbin/Ware/Wachusett water supply system. BWM has adopted a three-tiered approach to watershed protection:

1. Protect the most sensitive areas through ownership or agreements with land owners.
2. Correct existing sources that could cause or have caused contamination of any waters in the system.
3. Work with watershed communities to protect resources while accommodating local needs.

Over time, existing problems will be eliminated and watershed programs will focus on prevention and maintenance. BWM and MWRA believe that this watershed management system provides a drinking water source of exceptionally high quality, and have developed a comprehensive program to ensure that this level of quality will be maintained and enhanced.

Protect Sensitive Areas through Land Ownership and Other Controls

Direct ownership of critical land in the watershed ensures maximum control over land use and provides the best protection of water quality. BWM is one of the largest landowners in Massachusetts; BWM and MWRA are committed to increasing protected land ownership within the watersheds. BWM has implemented an aggressive land acquisition program to add to this acreage since 1991, utilizing a GIS-based acquisition model developed to prioritize remaining undeveloped parcels for purchase based on the greatest benefit to water quality. That model is still relevant and land acquisition priorities continue to be based on its results. Since 1998, 3,414 acres of land have been added to BWM holdings to increase protection. The percentage of BWM controlled land in the Wachusett Reservoir watershed, excluding the reservoir itself, has increased since 1985 from 7.9% to 29.1%. BWM controls 45% of the combined land in the three active water supply watersheds. If ownership of the approximately 4,000 acre Wachusett Reservoir is counted, BWM controls 33% of the watershed.

In addition to the land held by BWM, substantial acreage is protected from development by many other organizations and government agencies that own and maintain land as open space. This includes town conservation land, parcels held by land trusts and other conservation groups, other state agencies (particularly the Division of Fisheries and Wildlife), and other water suppliers (most notably, the City of Worcester). In the case of a state agency with a recreational mission, since 1990 the Bureau has held a Memorandum of Agreement (MOA) with the Department of Environmental Management (DEM, currently the DCR Division of State Parks and Recreation (DSPR)). In the

Table 3-2
1998 Wachusett Reservoir Watershed Protection Plan Proposed Actions and Status

Item	1998 Threat	1998 Actions	Status	2003 Threat	2003 Actions	2003 Staff Priority¹
Wildlife-Birds	HIGH	Implement bird control measures.	Successfully implemented program.	HIGH	Continue program.	HIGH
Wildlife-Aquatic Mammals	HIGH	Conduct Aquatic Wildlife Control Program.	Successfully implemented program. Increasing requests for assistance from towns and public.	HIGH	Continue program. Augment staff, as resources permit, for outreach and education.	HIGH
Stormwater	MED	Monitor and asses water quality for stormwater impacts.	Ongoing.	MED	Continue; expand as resources allow.	HIGH ²
		Implement institutional and local structural controls.	Ongoing. ³		Continue to review and coordinate local and state highway projects. Assist in implementation of “Phase II” regulations.	
		Construct structural controls on BWM property.	Installed several BMPs, such as filter curtain at Malagasco Brook.		Assess and prioritize possible structural improvements. Construct one stormwater BMP/year.	
		Provide education and outreach.	Ongoing.		Continue program.	MED
		Coordinate with MHD.	Ongoing.		Continue coordination and expand as resources allow. Utilize regulatory review to implement water quality BMPs.	

¹ Staffing priority addresses the amount of staff time and resources necessary to address the pollution threat.

² The Division’s stormwater sampling has demonstrated that there is major pollutant input during storm events. Taking into consideration the accomplishments in land acquisition, the sewer project and the Watershed Protection Act administration, stormwater has been promoted to a HIGH staff priority.

³ It is the responsibility of towns and the MHD to construct these controls on local and interstate roads. Recently adopted NPDES Phase II regulations and the state’s stormwater permitting process provided new venues for review and coordination.

Item	1998 Threat	1998 Actions	Status	2003 Threat	2003 Actions	2003 Staff Priority¹
Highways and Railways – Uncontrolled Releases	HIGH (potential)	Construct structural controls to improve safety and provide spill containment.	Installed new guardrails and other minor improvements. Majority of structural controls are responsibility of state or local highway authorities.	HIGH (potential)	Work with towns and MHD through stormwater permitting process and reconstruction projects to achieve structural improvements.	MED
		Map and assess drainage to reservoir and throughout watershed.	Completed mapping of discharges around reservoir.		Complete mapping and assessment of watershed drainage by 2005.	HIGH
		Track, manage, and limit transport of hazardous materials through watershed (rail and roadway)	Communication established with railroads. Federal regulations set disclosure standards.		Continue communication as needed.	LOW
		Develop Emergency Response Plan.	Completed.		Update as needed. Coordinate with other security issues.	HIGH
		Coordinate with MEMA.	Completed.		Continue communication as needed.	MED
		Construct watershed signs and stencil drains.	Signs installed through Public Access program.		Replace or install new signs as needed. Potentially provide stenciling through education/outreach programs.	LOW
		Provide Incident Command System (ICS) training to staff and local responders.	Completed.		Update as needed.	MED
		Ensure towns have adequate response equipment. Purchase Reservoir Response Units.	Completed.		Monitor use and update or replace equipment as needed.	MED
		Conduct mock emergency drill with other agencies.	Incomplete.		Conduct drill in 2004. Integrate security concerns into other programs.	HIGH

Item	1998 Threat	1998 Actions	Status	2003 Threat	2003 Actions	2003 Staff Priority¹
On-site Septic Systems	HIGH/ MED once sewers complete	Sewer critical areas.	Project will be complete by end of 2004.	HIGH/ MED once sewers complete	Complete Sewer Project. Track connections to sewers. Ensure that problems systems are connected. Monitor water to assess impact of sewers.	HIGH
		Assess and track on-site system performance and maintenance.	Work completed on tracking database.		Assess methods for ongoing tracking of septic systems. Develop methods for homeowner assistance in areas that will not be sewered	
Erosion	LOW	Identify and monitor construction projects via WsPA. Enforce WsPA, general watershed regulations (350 CMR 11.09), and other environmental regulations.	Ongoing monitoring, communication, and enforcement minimizes impacts from construction.	LOW	Continue to work with landowners to minimize erosion impacts from construction. Enforce all appropriate regulations.	MED ⁴
Local Land Uses – Construction and Future Development	MED	Administer and enforce WsPA, 350 CMR 11.09, and other environmental regulations.	Ongoing.	MED	Continue to administer and enforce regulations.	HIGH
Public Access	MED	Implement and update Public Access Plan.	Completed.	MED	Implement recommendations in Wachusett Access Plan Update.	HIGH
		Continue Watershed Ranger program to educate public and enforce regulations.	Ongoing.		Continue Watershed Ranger Program.	

⁴ The overall threat to water quality from erosion may not be significant, however the Division has assessed that there can be significant immediate environmental impacts from construction sites that are not properly controlled. This issue is also covered under “Local Land Uses – Construction.”

Item	1998 Threat	1998 Actions	Status	2003 Threat	2003 Actions	2003 Staff Priority¹
Agriculture-Chemicals	MED	Install BMPs.	Half of recommended BMPs installed; remainder are in process.	LOW ⁵	Survey through EQAs and routine water quality sampling.	LOW
		Provide outreach and education on water quality issues.	Coordinated efforts with DFA.		Continue coordination with DFA.	
Agriculture - Livestock & Crops	HIGH	Work with farmers to implement BMPs. Monitor and assess agricultural impacts through EQAs.	Half of recommended BMPs installed; remainder are in process.	LOW ⁵	Complete BMP installation. Re-assess volume of agricultural impacts.	LOW
Gasoline/Petroleum Storage	LOW	Identify problems via EQAs. Monitor releases through legal ads, field observation and coordination with DEP.	Ongoing.	LOW	Continue monitoring through all available processes.	LOW
Highways & Railways-Road Salting	LOW	Monitor through standard water quality testing and EQAs.	Ongoing.	LOW	Continue to monitor through standard water quality testing and EQAs.	LOW
Highways & Railways - Herbicide Use	MED	Work through MEPA and DFA to enforce exiting regulations.	Ongoing review of Right-of-Way Yearly Operating Plans. Participated in regulatory review.	LOW	Continue review of annual herbicide application plans and participation in regulatory review.	LOW
Local Land Uses - Gravel Mining	LOW	Monitor through WsPA and EQAs.	Ongoing.	LOW	Continue to monitor through WsPA and EQAs.	LOW
Permitted Activities - Solid Waste Facilities	LOW	None.	There are no active solid waste facilities in the Wachusett Reservoir watershed.	LOW	Maintain communication with DEP.	LOW

⁵ Agriculture - Chemicals was assigned a MEDIUM threat risk and Agriculture – Livestock & Crops was assigned a HIGH threat risk in the 1998 Plan due to concerns regarding several unknowns, such as farm activity and the nature of pathogen transmissions. Based on evaluations done over the past five years, including water quality sampling and analysis, environmental quality assessments, and studies by the University of Massachusetts, MDC has re-assigned these risks to LOW.

Item	1998 Threat	1998 Actions	Status	2003 Threat	2003 Actions	2003 Staff Priority¹
Permitted Act - NPDES/ Groundwater Discharges	LOW	Monitor and identify via EQAs.	Track through EQAs. All NPDES permits in the watershed are minor discharges.	LOW	Continue to monitor through EQAs. See stormwater recommendations above	LOW
Permitted Activities - Hazardous Waste Generators	LOW	Monitor and identify via EQAs.	Ongoing.	LOW	Continue to monitor through EQAs.	LOW
		Support Household Hazardous Waste Collection Days.	Funded set-up costs for regional collections.		Provide support if requested.	LOW
Private Forestry	LOW	Ensure private forestry complies with state regulations. Promote Ch. 61 protection.	Ongoing.	LOW	Continue to encourage private landowners to responsibly manage their forest resources.	LOW
Unauthorized Activities	LOW	Utilize Watershed Ranger Program and staff surveillance to enforce watershed regulations.	Ongoing.	LOW	Continue Watershed Ranger Program and maintain cooperative relationship with state and local police.	MED
Uncontrolled Releases - Fixed Site	LOW	Coordinate with DEP.	Track through EQA and staff surveillance.	LOW	Continue to resolve projects through DEP processes.	LOW

Comprehensive Measures				
Item	1998 Actions	Status	2003 Actions	2003 Staff Priority
Land Acquisition and Management	Continue Land Acquisition Program.	5 % increase in BWM controlled land (both fee and Conservation Restrictions), to a total of 29% of watershed.	Continue to purchase priority parcels as resources permit.	MED
	Develop Wachusett Reservoir Watershed Land Management Plan.	Completed.	Implement Land Management Plan recommendations	HIGH
Watershed Protection Act	Administer WsPA.	Ongoing.	Continue administration of the Act.	HIGH
BWM Enforcement Powers	Continue to identify violations of BWM and other environmental regulations.	Ongoing.	Continue surveillance and enforcement activities.	HIGH
Water Quality Monitoring	Continue routine water quality sampling.	Ongoing.	Continue program and increase stormwater monitoring and data analysis	HIGH
Local Bylaws and Regulations	Meet with local boards and provide technical assistance. Fund and administer Technical Assistance Contract Program.	Provided services at meetings and during business hours. Developed TA contract program.	Provide assistance within available resources.	LOW
MEPA Oversight	Review projects submitted to MEPA.	Ongoing.	Few projects require MEPA review. WsPA and other regulations provide opportunity to review most major construction projects in the watershed.	LOW
DEP Involvement	Coordinate with DEP.	Ongoing.	Maintain ongoing communication and coordination with DEP.	MED

Comprehensive Measures				
Item	1998 Actions	Status	2003 Actions	2003 Staff Priority
Public Education	Provide school programs, interpretive programs, and Resource Center. Watershed Rangers have daily contact with visitors.	Ongoing. Interpretive Center established at Stillwater Farm.	Maintain educational and interpretive programs. Watershed Rangers continue education through daily contact with visitors.	MED
Environmental Quality Assessments (EQAs)	Provide comprehensive assessments of water quality on a subbasin level.	Replaced sanitary surveys with more comprehensive EQAs.	Follow five-year cycle of EQA development. Promote recommendations identified by EQA process for implementation in watershed management activities.	HIGH

Table 3-3
Comparison of Threat Priorities, 1998 – 2003

POTENTIAL SOURCE OF CONTAMINATION	1998 THREAT	2003 THREAT	PLAN SECTION(S)
Wildlife – Birds	High	High	4.3.2
Wildlife – Aquatic Mammals	High	High	4.3.2
Stormwater	Medium	Medium	6.2
Highways and Railways – Uncontrolled Releases	High (Potential)	High (Potential)	6.3
On-site septic systems (<i>Once sewers complete</i>)	High (<i>Medium</i>)	High (<i>Medium</i>)	6.1.2
Erosion	Low	Medium	6.4.1
Local Land Uses – Construction	Medium	Medium	5.2, 5.3, 6.4.1
Local Land Uses – Future Development	Medium	Medium	4.1, 5.2, 5.3, 6.1, 6.2, 6.4.1
Public Access	Medium	Medium	4.3.1
Agriculture – Chemicals	Medium	Low ¹	6.4.2
Agriculture – Livestock & Crops	High	Low ¹	6.4.2
Gas/Petroleum Storage	Low	Low	5.2, 5.3
Highways and Railways – Road Salting	Low	Low	6.2, 6.3
Highways and Railways – Herbicide Use	Medium	Low ²	6.2, 6.3
Local Land Uses – Gravel Mining	Low	Low	5.2.1, 5.3
Permitted Activities – Solid Waste Facilities	Low	Low	5.2.2, 5.3
Permitted Activities – NPDES/Groundwater Dischargers	Low	Low	5.2, 5.3
Permitted Activities – Hazardous Waste Generators	Low	Low	5.2, 5.3
Private Forestry	Low	Low	6.4.3
Unauthorized Activities	Low	Low	4.3.1
Uncontrolled releases – Fixed Site	Low	Low	5.2.2, 5.3, 6.3.2

Source: DCR/DWSP/BWM, 2003

¹ Based on evaluations done over the past five years, including water quality sampling and analysis, environmental quality assessments, studies by the University of Massachusetts, and the reduction in the number of active farms, MDC has re-assigned these risks to LOW.

² Reduction of threat based upon pending adoption of revisions to 333 CMR 11.00.

MOA, BWM and DSPR agree to coordinate the management of adjacent lands under their respective care and control in order to enhance the protection of water resources. The total BWM-owned and other protected lands in the Quabbin, Ware, and Wachusett Reservoir watersheds exceed 63% of the watershed area.

Correct Existing Problems

When the 1991 Plan was written, the watershed assessment revealed some serious threats to source water quality. Although the watershed has only a limited number of point sources (e.g., direct discharges from wastewater treatment plants or industrial sites), there were nonpoint sources of pollution. Remediation measures focusing on these areas were developed and implemented; the 1998 Plan continued this strategy. BWM developed and maintains the highly successful gull harassment program and wildlife management strategy, both of which greatly reduced the coliform levels at the Wachusett intake.

DWM also worked with the communities of Holden and West Boylston to identify solutions to localized, severe septic system problems through the Wastewater Facilities Plan. The sewer project is 80% complete; when finished, approximately 40% of the homes in the Wachusett Reservoir watershed will be sewered to the Upper Blackstone Water Pollution Control Facility (discharged outside the watershed). These actions have resulted in, and will continue to produce, water quality improvements in the reservoir and tributaries.

BWM staff identify, evaluate, and monitor any environmental violations and sources of potential pollution in the watershed, utilizing tools such as water quality monitoring, site inspections, and permit reviews. BWM works with private landowners, town governments, transportation entities, and various state agencies to achieve compliance with environmental regulations and to reduce pollution potential in the watershed.

Work with Watershed Communities to Ensure Protection for the Future

Since BWM and MWRA must maintain good working relationships with watershed communities to protect water quality, they developed a protection strategy that supplements the direct ownership of the most sensitive lands by working with communities and individual landowners to ensure that development does not degrade water quality.

Staff enforce the 1992 WsPA, ensuring a buffer area between future development and watercourses and prohibiting land uses of concern within protective zones. A total of 12,305 acres in the Wachusett Reservoir watershed are regulated by the Act. There is an ongoing program of technical assistance and outreach for watershed town boards, which oversee many land use regulations. BWM also developed a program to work with owners of forested tracts of land to develop professional forest management plans to protect water quality. BWM and DEP work closely together and have procedures to ensure compliance of key environmental regulations such as Title 5, Stormwater Management Policy, NPDES permitting, the Wetlands Protection Act, and MEPA Regulations. Many of these regulations were revised in the 1990s, significantly strengthening control over both existing and future land uses and activities.

Plan Outline

The remainder of this Watershed Protection Plan establishes the framework for meeting the Bureau's mission. These chapters are organized as follows: Section 4 presents BWM's Land Acquisition Program and other land protection activities; Section 5 presents a summary of current monitoring programs; Section 6 addresses non-point source issues; Section 7 gives background on BWM infrastructure; Section 8 summarizes the comprehensive support programs provided by the Bureau; and Section 9 outlines a specific implementation strategy.

